

# QUICK-SETTING GROUT

V2/10 QUICK-SETTING GROUT  
V2/40 QUICK-SETTING GROUT  
V2/80 QUICK-SETTING GROUT  
V2/160 QUICK-SETTING GROUT

## TEST CERTIFICATES AND SUPPORTING DOCUMENTS

- › Certificate of conformity DAfStb Directive (VeBMR) "Herstellung und Verwendung von zementgebundenem Vergussbeton und Vergussmörtel" (Manufacture and use of cement-bonded concrete grout and grout) (QDB)
- › Product for the anchoring of reinforcing bars acc. to DIN EN 1504-6 "Verankerung von Bewehrungsstäben" (Anchoring of reinforcing bars)
- › High frost-deicing salt resistance - Verification by CDF procedure (**V2/40** and **V2/160**)
- › Factory production control acc. to DIN EN 1504-6
- › Company certification acc. to DIN EN ISO 9001:2015

## PROPERTIES

- › Pumpable and easy to process
- › Controlled swelling
- › Ready for bearing loads after 2 hours (even at 5 °C)
- › High early and final strength
- › Low w/c value
- › High frost and frost-deicing salt resistance
- › Impermeable to water and largely resistant to mineral oils and fuels
- › Building material class A1 acc. to decision 2000/605/EC of the European Commission dated September 26, 2000 (published in the official journal L258)

## AREAS OF APPLICATION

- › Quick-setting grout and concrete grout for precision machines of any kind
- › Turbines, generators, compressors, diesel engines and other power equipment exposed to high dynamic loads
- › Fixators and support points
- › Steel and concrete columns
- › Prefabricated concrete parts and structural steelworks
- › Bridge bearings and bridge transition structures
- › Crane rails and radio telescopes, iron and steel works as well as mines
- › Rail support systems
- › Repair system DEUTSCHE BAHN "Feste Fahrbahn" (solid track) with the Vossloh repair base DFF 300
- › Paper plants, chemical plants and refineries, wind turbines, mobile phone transmission masts
- › Iron and steel works as well as mines
- › EBA/ Deutsche Bahn AG Oberbautechnik TZF61-approved undergrouting material, height adjustment for rail fastenings

### MOISTURE CLASSES BASED ON CONCRETE CORROSION FROM ALKALI-SILICIC ACID REACTIONS

| Moisture class | WO | WF | WA | WS |
|----------------|----|----|----|----|
| <b>V2</b>      | •  | •  | •  | •  |

The aggregates in PAGEL®'s products comply with the requirements of alkali sensitivity class E1 from non-hazardous sources specified under DIN EN 12620.

### EXPOSURE CLASS ALLOCATION ACC. TO: DIN EN 206-1 / DIN 1045-2

|               | XO      | XC    | XD    | XS      | XF      | XA     | XM    |
|---------------|---------|-------|-------|---------|---------|--------|-------|
|               | 1 2 3 4 | 1 2 3 | 1 2 3 | 1 2 3 4 | 1 2 3 4 | 1 2 3* | 1 2 3 |
| <b>V2/10</b>  | •       | ••••  | •••   | •••     | •••     | •••    | •     |
| <b>V2/40</b>  | •       | ••••  | •••   | •••     | ••••    | •••    | •     |
| <b>V2/80</b>  | •       | ••••  | •••   | •••     | •••     | •••    | •     |
| <b>V2/160</b> | •       | ••••  | •••   | •••     | ••••    | •••    | •     |

\* Having sulfate attack up to 600 mg/l  
With protective measures according to DIN 1045-2

### Classification acc. to the DAfStb VeBMR directive:

|               |                | Flowability class | Slump flow class | Shrinkage class | Early strength class | Compressive strength class |
|---------------|----------------|-------------------|------------------|-----------------|----------------------|----------------------------|
| <b>V2/10</b>  | Categorisation | f2                | -                | SKVM II         | B                    | C55/67                     |
| <b>V2/40</b>  | Categorisation | f2                | -                | SKVM II         | B                    | C55/67                     |
| <b>V2/80</b>  | Categorisation | -                 | a3               | SKVB 0          | B                    | C60/75                     |
| <b>V2/160</b> | Categorisation | -                 | a2               | SKVB 0          | A                    | C60/75                     |



## TECHNICAL DATA

| TYPE                             |        |                   | V2/10    | V2/40    | V2/80    | V2/160   |
|----------------------------------|--------|-------------------|----------|----------|----------|----------|
| Grain size                       | mm     |                   | 0-1      | 0-4      | 0-8      | 0-16     |
| Undergrouting height             | mm     |                   | 5-30     | 20-100   | 50-200   | 100-400  |
| Amount of water                  | max.   | %                 | 13       | 13       | 11       | 10       |
| Consumption approx.              |        | kg/m <sup>3</sup> | 2,000    | 2,000    | 2,100    | 2,100    |
| Fresh mortar raw density approx. |        | kg/m <sup>3</sup> | 2,250    | 2,300    | 2,300    | 2,350    |
| Processing time approx.          | 20 °C  | min               | 30       | 30       | 30       | 30       |
| Slump flow                       | 5 min  | mm                | ≥ 650    | ≥ 650    | n. d.    | n. d.    |
|                                  | 30 min | mm                | ≥ 550    | ≥ 550    | n. d.    | n. d.    |
| Measure of extension             | 5 min  | mm                | n. d.    | n. d.    | ≥ 700    | ≥ 600    |
|                                  | 30 min | mm                | n. d.    | n. d.    | ≥ 620    | ≥ 520    |
| Swelling                         | 24 h   | Vol.-%            | ≥ 0.1    | ≥ 0.1    | ≥ 0.1    | ≥ 0.1    |
| Compressive strength*            | 2 h    | N/mm <sup>2</sup> | ≥ 5      | ≥ 5      | ≥ 5      | ≥ 5      |
|                                  | 4 h    | N/mm <sup>2</sup> | ≥ 10     | ≥ 10     | ≥ 10     | ≥ 10     |
|                                  | 6 h    | N/mm <sup>2</sup> | ≥ 12     | ≥ 12     | ≥ 12     | ≥ 12     |
|                                  | 8 h    | N/mm <sup>2</sup> | ≥ 15     | ≥ 15     | ≥ 15     | ≥ 15     |
|                                  | 12 h   | N/mm <sup>2</sup> | ≥ 18     | ≥ 18     | ≥ 18     | ≥ 18     |
|                                  | 1 d    | N/mm <sup>2</sup> | ≥ 30     | ≥ 25     | ≥ 25     | ≥ 40     |
|                                  | 7 d    | N/mm <sup>2</sup> | ≥ 60     | ≥ 60     | ≥ 60     | ≥ 60     |
| E-Module (static)                | 28 d   | N/mm <sup>2</sup> | ≥ 70     | ≥ 70     | ≥ 70     | ≥ 70     |
|                                  | 91 d   | N/mm <sup>2</sup> | ≥ 75     | ≥ 80     | ≥ 80     | ≥ 80     |
| E-Module (static)                | 1 d    | N/mm <sup>2</sup> | ≥ 25,000 | ≥ 25,000 | ≥ 25,000 | ≥ 25,000 |
|                                  | 28 d   | N/mm <sup>2</sup> | ≥ 30,000 | ≥ 30,000 | ≥ 30,000 | ≥ 30,000 |

\* Mortar compressive strength tested as specified by DIN EN 196-1;  
Concrete compressive strength tested as specified by DIN EN 12390-3  
n. d. = not determined

**Note:** All stated test values correspond to the DAfStb VeBMR directive.

Testing of fresh and solid mortars at 20 °C ± 2 °C, storage of the test specimen after 24 hours until the strength test in water at 20 °C ± 2 °C. Higher or lower temperatures result in deviating properties of fresh respectively solid mortars and test results. Depending on the temperature, the consistency can be adapted with a slight reduction of the mixing water.

**Storage:** 6 months. Cool, dry, free from frost. Unopened in its original container.  
**Delivery form:** 25-kg bag, Euro pallet 1,000 kg  
**Hazard class:** Non-hazardous material, observe information on packaging.  
**GISCODE:** ZP1

### PAGEL® PRODUCT COMPOSITION:

Cement: acc. to DIN EN 197-1  
Aggregate: acc. to DIN EN 12620  
Additions: acc. to DIN EN 450, general building inspection approval (abZ), DIN EN 13263 (fly ash, microsilica, etc.)  
Admixtures: acc. to DIN EN 934-4

## APPLICATION

### SUBSTRATE PREPARATION:

Remove loose and unsound material such as cement slurry and dirt etc. using suitable methods, e.g. shot-blasting or similar until the underlying solid grain structure has been exposed. A sufficient average tear strength ( $\geq 1.5 \text{ N/mm}^2$ , KEW  $\geq 1.0 \text{ N/mm}^2$ ) must be ensured.

#### Prewetting:

Prewet the concrete substrate to capillary saturation for approx. 6-24 hours.

#### Reinforcing steel:

Blast all rust off exposed reinforcement bars until the underlying metal has been exposed acc. to purity grade Sa 2 1/2 in accordance with DIN EN ISO 12944-4.

#### Non-iron metals:

Cement and cement-bound building materials may cause non-iron-metals in the transitional area of the contact surface (e.g. aluminium, copper, zinc) to loosen.

Please contact us for technical advice.

### FORMWORK:

Attach in such a way that it is leak-proof and robust. Seal on the concrete substrate. Use non-absorbent formwork.

#### Protruding grout:

Do not exceed the specified 50 mm when allowing grout to protrude and observe the structural specifications. When grouting dynamically stressed and pre-stressed base plates and machine foundations that are subject to high compression strengths at the edges, the grout should ideally be applied to be flush with the bearing plate, provided with a 45° edge using formwork or cut off flush with the bearing plate before it has set. This will prevent any stresses from becoming superimposed on one another and from becoming annihilated (observe static and structural specifications).

### MIXING:

The dry mortar is supplied ready to use and only needs to be mixed with water. Fill the specified amount of water apart from a residual amount into a clean and suitable mixing device (e.g. compulsory mixer).

Add the dry mortar and mix for at least 3 minutes.

Add the remaining water and mix for at least another 2 minutes until it forms a homogeneous mass.

### GROUTING:

The mixture must be poured from one side or corner only in one continuous pour. When grouting large areas, we recommend to pour the grout starting in the centre of the foundation plate, using a funnel or filling hose. Cavities should be filled first (up to around just below the top edge) and then the machine plate or similar.

**Temperature range:** +5 °C to + 35 °C

**Mixing water:** Drinking water quality

### FOLLOW-UP TREATMENT:

Exposed grout areas must be protected from premature water evaporation (from wind, draughts, direct exposure to sun, etc.) immediately on completion of the work for a period of 3-5 days.

#### Suitable curing methods:

Water spray, foil covers with jute sheets, thermofolios or moisture-retaining covering sheets, **01** EVAPORATION PROTECTION.

The technical data sheet must be observed when using **01** EVAPORATION PROTECTION.